

**BY ORDER OF THE COMMANDER  
437TH AIRLIFT WING**

**JOINT BASE CHARLESTON  
INSTRUCTION 21-301**

**4 APRIL 2011**

***Maintenance***

***AIRCRAFT ENGINE RUN POLICY***



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OPR: 437 MXG/QA

Supersedes: CHARLESTONAFBI 21-  
301, 1 April 2005

Certified by: 437 MXG/CC  
(Colonel James A. Clavenna)

Pages: 7

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This instruction implements Air Force Policy Directive (AFPD) 21-1, Managing Aerospace Equipment Maintenance, Air Force Instruction (AFI) 21-101, Aircraft and Equipment Maintenance Management, and AFI 31-213, Airfield Management. This instruction outlines the engine run policy and restrictions for all aircraft on Joint Base Charleston. This instruction applies to all organizations within the 437th/315th Maintenance and Operations Groups, 628th Mission Support Group, and transient aircraft. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/gcss-af61a/afirms/afirms/>. This publication may not be supplemented. No waivers may be granted for any part of the publication. **NOTE:** This Instruction replaces the 1 April 2005 edition of Charleston Air Force Base Instruction 21-301.

***SUMMARY OF CHANGES***

This publication is updated to reflect changes in guidance and procedures dealing with the ground operations of aircraft engines at Joint Base Charleston. The major changes include the addition of the fire department standby requirements; updates to the general requirements section; and update of responsibilities for maintenance engine run crews.

**1. General:**

1.1. For the purpose of this instruction, specific definitions are described as follows: An engine run is defined as anytime an aircraft engine start switch is set to the on position resulting in engine compressor rotation. Additionally there are two types of engine runs, engine idle runs and engine power runs (any engine run where the power setting is above idle).

1.2. Aircraft engine runs are conducted to facilitate maintenance, diagnose discrepancies, and ensure system integrity.

1.3. All aircraft parking spots are approved for engine idle runs and engine power runs in reverse thrust in accordance with TO 1C-17A-2-71JG-00-1 page 2-2.

1.4. The primary location to perform engine power runs shall be on parking spots 20-26, 28 or 30-33. The engine power run shall only be performed at these parking spots when Runway 03/21 is closed and when the closure is limited to 1 hour or less. If winds are out of limits (wind direction and velocity must be within specific tolerances as set forth in TO 1C-17A-2-71JG-00-1. Paragraph 1-11), if Runway 03/21 cannot be closed, or if the engine power run will be for a period greater than an hour, the engine power run may be performed at the alternate locations set forth in paragraphs 1.5 or 1.7 below.

1.5. Parking spots 1-6 may be used as an alternate spot for engine power runs so long as the OG/CC approves the closure of runway 15/33.

1.6. Certain conditions such as aircraft parking ramp at maximum capacity, wind conditions, and closed sections of the airfield may require aircraft to be positioned on designated engine run spots which are located on Taxiway Kilo and Taxiway Delta. These designated locations are set forth in paragraphs 1.8, 2.5.5.1, 2.5.5.2, and 2.5.5.3 (for visual aid see attachment 2).

1.7. Prior to an aircraft being positioned on any taxiway, the Airfield Management (OSA) Duty Officer will be contacted for approval. The OSA Duty Officer will coordinate the aircraft position with the Control Tower and issue a local Notice to Airmen (NOTAM).

1.8. If an engine power run is expected to last more than 1 hour and the run is not in reverse thrust, the aircraft will be towed to spot 88/89 (old blast fence area) or to the dog leg area of Taxiway Kilo with the nose facing towards the approach end of Runway 03, and the exhaust pointed toward the Hot Cargo Area.

1.9. MXG/CC and OG/CC must approve any exceptions to the policies covered in this instruction.

**2. Responsibilities:****2.1. Operations Group Commander**

2.1.1. Coordinates with the production superintendent, Maintenance Operations Center (MOC), and Base Operations for active runway closures, if required.

2.1.2. Serves as the approval authority for runway closures.

**2.2. Flight Line Ramrod**

2.2.1. Coordinates with the Production Superintendent and MOC for active runway closures, if required.

### 2.3. Squadron Production Superintendent

- 2.3.1. Serves as the approval authority for engine idle runs.
- 2.3.2. Coordinates with Ramrod and MOC to obtain OG/CC, or designated representative, approval to close an active runway for an engine power run.
- 2.3.3. Prior to requesting approval for engine power runs, will consider the following:
  - 2.3.3.1. Duration of the engine run.
  - 2.3.3.2. Wind conditions (current and expected).
- 2.3.4. Notifies the engine run crew of engine run approval.

### 2.4. Maintenance Operations Center

- 2.4.1. Monitors all maintenance engine runs and completes the engine run checklist.
- 2.4.2. Notifies OSA of runway closure requirement and engine runs to be conducted on Taxiway Kilo and Taxiway Delta.
- 2.4.3. Coordinates with Ramrod and OSA on active runway and taxiway closure risk assessment. If assessment allows, contacts OG/CC, or designated representative, for runway closure approval. (Base Ops Duty Office has been delegated the authority to close Runway 03/21 by the 437 OG/CC, 437 OG/CC is the only closure authority for Runway 15/33).
- 2.4.4. Deconflicts combat off-load locations, if required.
- 2.4.5. Calls the Air Terminal Operations Center Duty Officer at ext. 3246/3215 prior to engine runs on spots 21-33 (the 100 areas).

### 2.5. Base Operations (Airfield Management Duty Officer and Airfield Management Operations Coordinator)

- 2.5.1. Prior to any runway closure, will conduct operational risk management and assess the following:
  - 2.5.1.1. Airfield construction and maintenance activities.
  - 2.5.1.2. Weather and visibility.
  - 2.5.1.3. Scheduled airfield closures.
- 2.5.2. Coordinates with Charleston Tower to close and reopen appropriate runway.
- 2.5.3. Notifies MOC when the runway is closed.
- 2.5.4. Issues local NOTAM for engine runs on Taxiway Kilo, closing Taxiway Kilo to combat off-loads for the duration of the engine run operation.
- 2.5.5. When an aircraft is towed to a designated spot on Taxiway Delta, issues local NOTAM, closing the affected section of taxiway and coordinates with Charleston Tower to ensure Automatic Terminal Information Service is updated to reflect the following:
  - 2.5.5.1. If the aircraft is on engine run spot D1 (adjacent to aircraft parking spot 5, aircraft positioned nose toward Taxiway Echo), close Taxiway Delta from spot 4 through 6.

2.5.5.2. If the aircraft is on engine run spot D2 (adjacent to aircraft parking spot 20, aircraft positioned nose toward Taxiway Fox), close Taxiway Delta from spot 16 through spot 19.

2.5.5.3. If the aircraft is on engine run spot D3 (adjacent to parking spot 29, aircraft positioned nose toward Taxiway Hotel) or D4 (adjacent to aircraft parking spot 33, aircraft positioned nose toward Taxiway Kilo) close Taxiway Delta from spot 29 through spot 33.

## 2.6. Fire Department

2.6.1. Fire department will provide "on-scene" standby assistance for open-cowling engine runs under the following conditions:

2.6.1.1. Any major fuel system component replacement (e.g., fuel control, primary fuel feed line, etc.).

2.6.1.2. Any major fuel system troubleshooting procedure.

2.6.1.3. Problematic engines (e.g., flameouts, compressor stalls, etc.).

2.6.1.4. New or completely overhauled engines upon installation.

2.6.1.5. Upon request of the MXG/CC or designated representative (e.g., Ramrod, Production Supervisor).

2.6.2. Any other standby posturing for situations not mentioned in Section 2.6, will be the decision of the Fire Chief or on-duty Senior Fire Official.

## 2.7. Maintenance Engine Run Crew

2.7.1. Will be qualified in all prerequisites outlined in AFI 21-101, Air Mobility Command Supplement *Para 14.15 Engine Run Training and Certification Program*, and MOI 25-1 *Maintenance Group Training, Para. 6*.

2.7.2. Coordinates with their Squadron Production Superintendent to initiate the engine run approval sequence.

2.7.3. Prior to engine start, will contact MOC (UHF 349.4) for radio check and advise of engine run spot, aircraft tail number, and duration of operation. Aircraft will maintain radio contact with the MOC for emergency notification during the engine run.

2.7.4. Will set backup radio (ARC 210) to 349.4 for emergency backup or have a handheld radio available.

2.7.5. When running engines above idle, the person operating the engine controls must ensure the aircraft has a clear path in case the aircraft should jump chocks. Additionally, operators must verify the engines are not hanging over the grass.

2.7.6. When running engines above idle, especially at max thrust, ensure person standing as ground observer is alert in detecting any traffic approaching behind the aircraft; i.e. other aircraft or vehicles. Return engines to idle until traffic has cleared the area behind aircraft.

**3. Coordination and Approval Sequence for Engine Power Runs Requiring Runway Closure:**

- 3.1. Production Superintendent, in coordination with Ramrod, contacts MOC and provides required information.
- 3.2. MOC coordinates with OSA Duty Officer on runway closure requirement.
- 3.3. OSA Duty Officer will coordinate with the Control Tower to deconflict arrival and departure traffic requirements for runway closure times.
- 3.4. MOC contacts OG/CC, or designated representative, for approval to close runway.
- 3.5. MOC notifies Production Superintendent of approved runway closure.
- 3.6. Production Superintendent notifies engine run crew to initiate the engine run checklist (per the job guide) and hold at idle.
- 3.7. Engine run crew establishes communication with the MOC (UHF 349.4). Communication is necessary to check radios and establish emergency network with the MOC.
- 3.8. When at idle speed, the engine run crew contacts MOC to request runway closure.
- 3.9. MOC notifies OSA requesting to close runway.
- 3.10. Base Operations calls the tower to close the active runway (maximum 1 hour duration begins).
- 3.11. OSA calls MOC with runway closure notification and passes runway closure effective time.
- 3.12. MOC notifies engine run crew when runway is closed.
- 3.13. Engine run crew notifies MOC when power run is complete.
- 3.14. MOC calls OSA to notify them the power run is complete.
- 3.15. OSA calls tower when the power run is complete and reopens the runway.

**4. Appendages:** Any changes or alterations to this instruction due to construction on the airfield or mission requirements will be coordinated through both the 437th Operations Group and 437th Maintenance Group prior to changes being authorized.

**5. Adopted Forms:**

AF Form 847, *Recommendation for Change of Publication*

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**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-101, *Air Mobility Command Supplement*, 12 April 2010

MOI 25-1, *Maintenance Group Training*, 10 June 2010

TO 1C-17A-2-71JG-00-1, *Power Plant General*, 14 Oct 2010

***Acronyms and Abbreviations***

**MOC**—Maintenance Operations Center

**NOTAM**—Notice to Airmen

**OSA**—Airfield Management

Attachment 2

TAXIWAY DELTA POWER RUN LOCATIONS

